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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/582,737

06/13/2006

Yukiya Kanazawa

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52044

7590

03/31/2008

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EXAMINER

HOLLWEG, THOMAS A

ART UNIT

PAPER NUMBER

2879

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/582,737	Applicant(s) KANAZAWA ET AL.	
	Examiner Thomas A. Hollweg	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/13/06.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/13/2006, 11/28/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Preliminary Amendment

1. The preliminary amendment, filed June 13, 2006, is acknowledged.

Information Disclosure Statement

2. The information disclosure statements (IDS) submitted on June 13, 2006, and November 28, 2007, are in compliance with the provisions of 37 CFR 1.97.

Accordingly, the information disclosure statement is being considered by the examiner.

Claim Objections

3. The following claims are objected to because of the following informalities:
 - a. Claim 1, the phrase "within a region positionally corresponding to, in the radial direction, the space between the electrodes, on a cross-sectional surface where an outer circumference of the arc tube comes closest to an inner circumference of the casing tube." is awkward. For purposes of examination this phrase will be interpreted as follows: "within a region positionally corresponding to the space between the electrodes, where an outer surface of the arc tube comes closest to an inner surface of the casing tube, in the radial direction."Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. The phrase "the portion positionally corresponding to, in a radial direction of the arc tube, a space between the electrodes" is unclear. For purposes of examination it is assumed that the portion of the arc tube being described is the portion positionally corresponding to a space between the electrodes.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-4, 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhu et al., U.S. Patent Application Publication No. 2003/0141826 A1, in view of itself.

9. With regard to claim 1, in figures 1 and 2, Zhu discloses a metal halide lamp (10) comprising: an arc tube (20) having an envelope made of translucent ceramic, a pair of electrodes (33a, 33b) disposed therein, and one or more halides are enclosed therein; and a casing tube (11) surrounding at least a portion of the arc tube (20), the portion positionally corresponding to a space between the electrodes (33a, 33b), wherein $L/D \geq 4$ [0026], where L is a length of the space between the electrodes and D is an internal diameter of the arc tube [0018-0026]. Zhu discloses that the internal diameter of the arc

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tube is 4 or 5 mm, however, Zhu does not expressly disclose that $R/r \geq 3.0$, where R is an internal diameter of the casing tube and r is an external diameter of the arc tube within a region positionally corresponding to the space between the electrodes, where an outer circumference of the arc tube comes closest to an inner circumference of the casing tube, in the radial direction.

10. One having ordinary skill in the art would understand that the arc tube of a metal halide lamp operates at a very high temperature, and conventionally the outer casing is spaced away from the arc tube so that the outer casing is not subject to high heat during operation, and heat cycling when the lamp is turned on and off, which can lead to cracking of the outer casing. It has been held that where the general limitations of the claim are taught by the prior art, discovering an optimum or workable range involves only routine skill in the art (*In re Aller*, 105 USPQ 233 (CCPA 1955)).

11. Therefore, at the time of invention, it would have been obvious for a person having ordinary skill in the art to construct the Zhu metal halide lamp where $R/r \geq 3.0$, where R is an internal diameter of the casing tube and r is an external diameter of the arc tube within a region positionally corresponding to the space between the electrodes, where an outer circumference of the arc tube comes closest to an inner circumference of the casing tube, in the radial direction, in order to avoid cracking the outer casing.

12. With regard to claim 2, Zhu discloses or suggests all of the limitations, as discussed in the rejection of claim 1, including that $4.7 \leq R/r \leq 8.0$, because this is an obvious optimization of ranges.

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13. With regard to claim 3, Zhu discloses or suggests all of the limitations, including that $4 \leq L/D \leq 10$ [0025-0026].

14. With regard to claim 4, Zhu discloses or suggests all of the limitations, including that $4 \leq L/D \leq 10$ [0025-0026].

15. With regard to claim 9, Zhu discloses that the halides include sodium [0005].

16. With regard to claim 11, in figure 11, Zhu discloses a metal halide lamp; and a lighting circuit for illuminating the metal halide lamp [0046].

17. Claims 5 and 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Zhu et al., U.S. Patent Application Publication No. 2003/0141826 A1 as applied to claims 1 and 4 above, and further in view of Gu et al., U.S. Patent No. 6,441,564 B1.

18. With regard to claim 5, Zhu discloses or suggests all of the limitations, as discussed in the rejection of claim 1, however, Zhu does not expressly disclose that the arc tube is disposed in a hermetically-sealed space, and a degree of vacuum in the space is no more than 1×10^1 Pa at 300 K.

19. Gu, in figure 1A, teaches a high pressure lamp having an arc tube (1) and a casing (4) where the arc tube (1) is disposed in a hermetically-sealed space, and the space is kept under vacuum (col. 4, lines 19-22). One having ordinary skill in the art would understand that a space kept under vacuum would have a pressure of no more than 1×10^1 Pa at 300 K.

20. Therefore, at the time of invention, it would have been obvious for a person having ordinary skill in the art to construct the Zhu metal halide lamp where the arc tube is disposed in a hermetically-sealed space, and a degree of vacuum in the space is no

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more than 1×10^1 Pa at 300 K, as taught by Gu. When the space between the arc tube and the casing is kept under vacuum, heat does not transfer from the arc tube to the casing efficiently, preventing the casing from being damaged by the heat of the arc tube during lamp operation.

21. With regard to claim 6, Zhu discloses or suggests all of the limitations, as discussed in the rejection of claim 4, however, Zhu does not expressly disclose that the arc tube is disposed in a hermetically-sealed space, and a degree of vacuum in the space is no more than 1×10^1 Pa at 300 K.

22. Gu, in figure 1A, teaches a high pressure lamp having an arc tube (1) and a casing (4) where the arc tube (1) is disposed in a hermetically-sealed space, and the space is kept under vacuum (col. 4, lines 19-22). One having ordinary skill in the art would understand that a space kept under vacuum would have a pressure of no more than 1×10^1 Pa at 300 K.

23. Therefore, at the time of invention, it would have been obvious for a person having ordinary skill in the art to construct the Zhu metal halide lamp where the arc tube is disposed in a hermetically-sealed space, and a degree of vacuum in the space is no more than 1×10^1 Pa at 300 K, as taught by Gu. When the space between the arc tube and the casing is kept under vacuum, heat does not transfer from the arc tube to the casing efficiently, preventing the casing from being damaged by the heat of the arc tube during lamp operation.

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24. Claims 7, 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhu and Gu as applied to claims 4 and 5 above, and further in view of De Maagt et al., U.S. Patent No. 5,986,405 B1.

25. With regard to claim 7, Zhu discloses or suggests all of the limitations, as discussed in the rejection of claim 4, however, Zhu does not expressly disclose that one or more oxygen-releasing getters are disposed in the space. De Maagt, in figure 1, discloses a high pressure discharge lamp one or more oxygen-releasing getters (6) are disposed in the space between the arc tube (1) and the outer casing (4) (col. 2, lines 62-67 & col. 5, lines 6-14).

26. At the time of invention, it would have been obvious for a person having ordinary skill in the art to construct the Zhu metal halide lamp with one or more oxygen-releasing getters are disposed in the space, as taught by De Maagt. Including this getter will prevent the loss of sodium from the gas filling of the discharge vessel, as taught by De Maagt (col. 1, lines 25-28).

27. With regard to claim 8, Zhu and Gu disclose or suggest all of the limitations, as discussed in the rejection of claim 6, however, neither Zhu nor Gu expressly discloses that one or more oxygen-releasing getters are disposed in the space. De Maagt, in figure 1, discloses a high pressure discharge lamp one or more oxygen-releasing getters (6) are disposed in the space between the arc tube (1) and the outer casing (4) (col. 2, lines 62-67 & col. 5, lines 6-14).

28. At the time of invention, it would have been obvious for a person having ordinary skill in the art to construct the Zhu metal halide lamp, as modified by Gu, with one or

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more oxygen-releasing getters are disposed in the space, as taught by De Maagt.

Including this getter will prevent the loss of sodium from the gas filling of the discharge vessel, as taught by De Maagt (col. 1, lines 25-28).

29. With regard to claim 10, Zhu discloses that the halides include sodium [0005].

Double Patenting

30. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

31. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

32. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

33. Claims 1-6 and 11 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 3, 5 and 8 of Kakisaka, U.S. Patent (allowed but not issued) Application No. 10/582844 (reference is to claim numbers of the 12/19/2007, claim amendment). Although the conflicting claims are not identical, they are not patentably distinct from each other because, Kakisaka, claim 3 contains all

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of the limitations of claim 1 of the present application. Also, Kakisaka, claim 3, contains all of the limitations of claims 2, 3 and 4 of the present application. Further, Kakisaka, claim 5, contains all of the limitations of claims 5 and 6 of the present application. And lastly, Kakisaka, claim 8 contains all of the limitations of claim 11 of the present application. Therefore, claims 1--6 and 11 are rejected because they are not patentably distinct from the cited claims of the Kakisaka patent.

Conclusion

34. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas A. Hollweg whose telephone number is (571) 270-1739. The examiner can normally be reached on Monday through Friday 7:30am-5:00pm E.S.T..

35. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

36. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TH/

/Sikha Roy/
Primary Examiner, Art Unit 2879